

Title (en)
APPARATUS FOR CONTINUOUS ANNEALING OF STRIP AND METHOD FOR CONTINUOUS ANNEALING OF SAME

Title (de)
VORRICHTUNG ZUM DURCHLAUFGLÜHEN VON STREIFEN UND VERFAHREN ZUM DURCHLAUFGLÜHEN VON DAFÜR

Title (fr)
APPAREIL DE RECUIT CONTINU POUR UN RUBAN ET SON PROCÉDÉ DE RECUIT CONTINU

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Application
EP 14873605 A 20141223

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Abstract (en)
[origin: EP3088538A1] The present invention relates to an apparatus for continuous annealing of a strip, capable of manufacturing a high-strength and highly ductile cold-rolled steel sheet having both excellent strength and ductility, and to a method for continuous annealing of a strip. The continuous annealing apparatus, according to the present invention, is capable of continuous annealing by cooling after heating, and then reheating, unlike an existing continuous annealing apparatus which heats only once and then cools or provides an overaging treatment. As a result, the continuous annealing apparatus, according to the present invention, can preliminarily render a homogeneous texture or control the texture as desired, and then perform another reheating heat treatment to stabilize the texture or control the shape thereof to a desired state. Also, provided is a continuous annealing apparatus and a continuous annealing method using the apparatus, the continuous annealing apparatus also capable of manufacturing high-strength steel having excellent processability and strength by using a low alloy, and capable of manufacturing a zinc-plated strip having excellent plated surfaces by controlling the thickness of elements and oxides enriched on the surface of the strip.

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• [XY] US 4705579 A 19871110 - FUJII TAISUKE [JP]
• [Y] JP 4110584 B2 20080702
• [X] US 2004099349 A1 20040527 - HOYDICK DAVID PAUL [US]
• [X] CN 101942603 A 20110112 - UNIV BEIJING SCIENCE & TECH, et al
• [X] CN 101671772 A 20100317 - UNIV YANSHAN
• See references of WO 2015099402A1

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